

Pleomorphic Adenoma of External Auditory Canal

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Abstract Pleomorphic adenoma comprises about 80% of the benign salivary gland tumours and is characterised by a slow growth and a clinically benign course. This tumour is known to occur at various other anatomical locations apart from the major salivary glands. Case reports of this tumour arising from the nasal septum, tongue, turbinate, upper lip, lungs, trachea and lacrimal glands have been found in the literature. But case reports of pleomorphic adenoma from the external auditory canal have been extremely few.

Keywords Pleomorphic adenoma · External auditory canal

Introduction

Pleomorphic adenoma is also known as “Mixed tumor” and it derives this name from the architectural pleomorphism or variable appearance seen by light microscopy. The majority of these tumors arise within the parotid gland (75–85%). When occurring in minor salivary glands, the palate is the most common site (60–65%). Pleomorphic adenoma of the external auditory canal is a rare entity. It is considered to be derived from the ceruminous glands [1]. Histologically, pleomorphic adenoma is highly variable in appearance,

even within individual tumors. Classically it is biphasic and is characterized by an admixture of polygonal epithelial and spindle-shaped myoepithelial elements in a variable background stroma that may be mucoid, myxoid, cartilaginous or hyaline. Epithelial elements may be arranged in duct-like structures, sheets, clumps and/or interlacing strands and consist of polygonal, spindle or stellate-shaped cells (hence pleiomorphism). Areas of squamous metaplasia and epithelial pearls may be present. The tumour is not enveloped, but it is surrounded by a fibrous pseudocapsule of varying thickness. The tumor extends through normal glandular parenchyma in the form of finger-like pseudopodia, but this is not a sign of malignant transformation.

Case Report

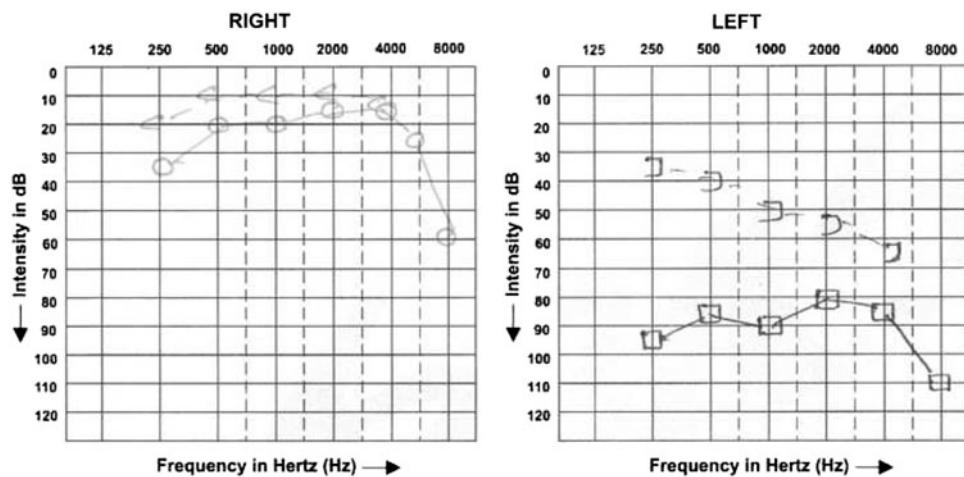
A 37 year old female patient, Neelam Kumari presented as an outdoor patient in November 2006 with chief complaints of discharge and ear blockade in the left ear for approximately 4 months. She was having progressive hearing loss on the left side for last 1 year. A pink coloured mass along with mucopurulent discharge was seen filling the external auditory canal. The patient was provisionally treated on the lines of Chronic Suppurative Otitis Media with Aural polyp. She was put on antibiotics and reviewed after 1 week. The discharge responded to antibiotics and the aural mass could now be clearly examined. It was quite firm in consistency and did not look like an aural polyp. It was not bleeding to touch and there was no history of bleeding from the mass. The patient was not giving any history of ear discharge in the past history. X-ray mastoids was showing similar status for both sides mastoid air cells and was not suggestive of a chronic pathology of the mastoid air cell system on the left side. Haematological and biochemical tests were within

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Fig. 1 Pre operative audiogram of the patient



normal limits. Pure Tone Audiometry showed 85 db mixed hearing loss on left side. Hearing sensitivity was within normal limits on the right side (Fig. 1). A Fine Needle Aspiration Cytology of the mass was done but the report was inconclusive about the exact histopathological entity. CT scan temporal bone showed a homogenous mass filling the external auditory canal without any bony erosion; and all other relevant anatomical structures were unremarkable. Under local anesthesia, excision biopsy of the tumour was done by a post aural approach. Per-operatively it was seen that there was widening of the bony part of the external auditory canal due to pressure effect, but no infiltration or bony erosion was seen. The tumour could be separated from the tympanic membrane without much difficulty under microscope. The tympanic membrane was, however, quite thickened but no middle ear involvement was seen. Thus, the complete surgical removal of the mass was successfully carried out. External auditory canal was packed with gel-foam soaked in antibiotic drops and a canal pack was placed.

The biopsy of the tumour showed epithelial and myoepithelial type of cells arranged in tubules, glands, cribriform pattern and cords (Fig. 2). The inner layer of cells was epithelial and outer layer of cells was myoepithelial type. The cells were surrounded by myxoid and fibromyxoid stroma (Fig. 3). No malignant changes were seen. This confirmed the diagnosis of pleomorphic adenoma. The canal care was done for 4 weeks to avoid post operative stenosis. The appearance of tympanic membrane was completely within normal limits 6 weeks post surgery. Epithelisation of the external auditory canal was complete by 8 weeks and hearing of the patient improved significantly after surgical removal of the tumour. A mention is made here of the fact that a sensorineural component of hearing loss was also seen in the audiogram of this patient which could have been due to an earlier pathology of the inner ear. However, the hearing loss became socially significant to the patient only after the tumour highly added to the conductive component of the hearing loss. The possibility of an earlier infective,

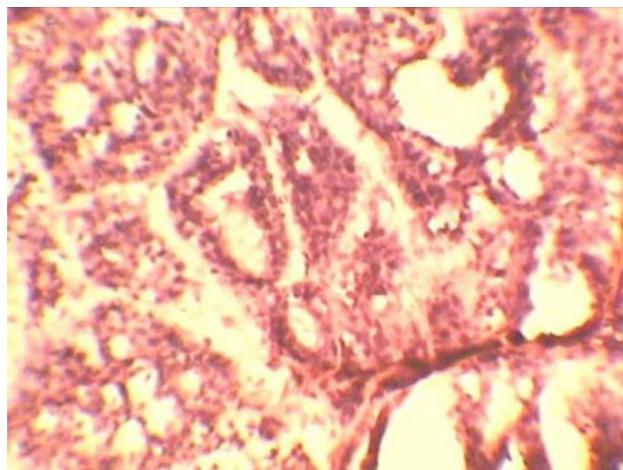


Fig. 2 Glands and cribriform pattern—epithelial and myoepithelial cells

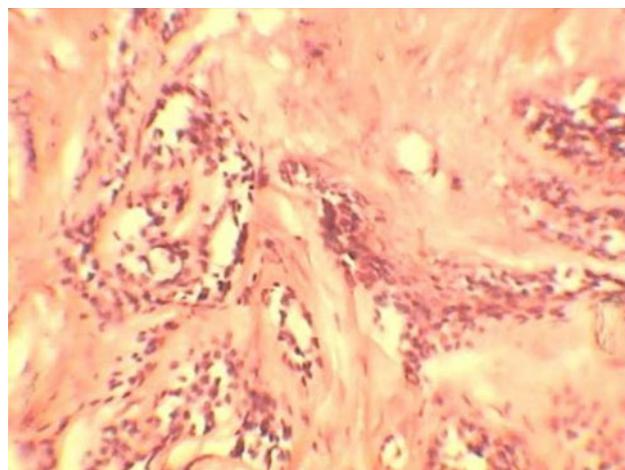


Fig. 3 Microscopic section showing myxoid and fibromyxoid stroma

ischemic, or related cochlear pathology which contributed to the sensorineural component of hearing loss can not be ruled out; which went unnoticed by the patient till the development of the tumour, keeping in view that the other ear was having a normal hearing threshold. The patient is completely free from any recurrence after a 21 months follow up.

Discussion

The normal external auditory canal is lined by a very thin squamous mucosa covering scant fibrous stroma containing both sebaceous and modified apocrine sweat glands- the ceruminous glands. The ceruminous glands are deep within the dermis, usually close to the cartilage, which is present in the outer part of the canal. The inner bony portion of the canal does not contain ceruminous glands. Ceruminous glands are not present within the middle ear, nor have they been ectopically identified in this location [2]. Even though an adenoma can fill the external auditory meatus, an intact tympanic membrane is nearly always identified. Ceruminous gland adenomas are the most common external auditory canal tumors. The neoplasms have been divided into three major groups based on specific histologic findings: ceruminous adenoma, ceruminous pleomorphic adenoma, and syringocystadenoma papilliferum [3]. They demonstrate a dual cell population of basal myoepithelial-type cells and luminal ceruminous (ceruminous) cells. The presence of a more abundant myoepithelial cell population juxtaposed next to areas of increased stroma, specifically mucoid to myxoid-chondroid matrix material, in the presence of ceruminous cells within the “duct-like” structures, confirms the diagnosis of a ceruminous pleomorphic adenoma [3].

Any age can be affected, with a range from 12 to 85 years, although the mean age at presentation is 52–54 years. While patients with ceruminous pleomorphic adenoma are younger at initial presentation (mean, 50.5 years), there are too few cases to perform a valid statistical analysis. No gender predilection exists for the whole group, although there may be a slight gender bias towards men with ceruminous pleomorphic adenoma (8:5), contrary to suggestions in individual case reports [3].

Other benign tumours of the external auditory canal include papilloma, sebaceous adenoma, exostoses, osteoma, fibroma, chondroma, myoma, and angioma. Generally, all benign tumors of the external auditory canal are treated with wide surgical excision [4].

Pleomorphic adenomas have been classified as a benign tumor, but they have the capacity to grow to large proportions and may undergo malignant transformation. The incidence of malignant transformation has been cited as 6%, and the most important factor which determines this tendency is the length of the time for which the tumour has been present [5]. Pleomorphic adenomas are treated with wide surgical excision to minimize any chances of recurrence. The histopathologic characteristic most frequently associated with recurrent tumour is a myxoid stroma, which could be spilled into the surgical field, providing a nidus for future recurrence [6].

The emphasis on having an academic review into the provisional diagnosis of a patient can be made by the fact that what appeared to be a routine clinical diagnosis of Chronic Suppurative Otitis Media with Aural polyp turned out to be a rare case of Pleomorphic adenoma of the external auditory canal.

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